

Serial Number: 09/786,389CRF Processing Date: 11/6/2001
Edited by: AN
Verified by: AN (STIC stat)

ENTERED

- ☐ Changed a file from non-ASCII to ASCII
- ☐ Changed the margins in cases where the sequence text was "wrapped" down to the next line.
- ☐ Edited a format error in the Current Application Data section, specifically: _____
- ☐ Edited the Current Application Data section with the actual current number. The number inputted by the applicant was ☐ the prior application data; or ☐ other _____
- ☐ Added the mandatory heading and subheadings for "Current Application Data".
- ☐ Edited the "Number of Sequences" field. The applicant spelled out a number instead of using an integer.
- ☐ Changed the spelling of a mandatory field (the headings or subheadings), specifically: _____
- ☐ Corrected the SEQ ID NO when obviously incorrect. The sequence numbers that were edited were: _____
- ☐ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited: _____
- ☐ Corrected subheading placement. All responses must be on the same line as each subheading. If the applicant placed a response below the subheading, this was moved to its appropriate place.
- ☐ Inserted colons after headings/subheadings. Headings edited included: _____
- ☐ Deleted extra, invalid, headings used by an applicant, specifically: _____
- ☐ Deleted: ☐ non-ASCII "garbage" at the beginning/end of files; ☐ secretary initials/lienamo at end of file; ☐ page numbers throughout text; ☐ other invalid text, such as _____
- ☐ Inserted mandatory headings, specifically: _____
- ☐ Corrected an obvious error in the response, specifically: _____
- ☐ Edited identifiers where upper case is used but lower case is required, or vice versa.
- ☐ Corrected an error in the Number of Sequences field, specifically: _____
- ☐ A "Hard Page Break" code was inserted by the applicant. All occurrences had to be deleted.
- ☐ Deleted ending stop codon in amino acid sequences and adjusted the "(A)Length:" field accordingly (error due to a PatentIn bug). Sequences corrected: _____
- ☒ Other: Seq. 5- deleted invalid characters

Examiner: The above corrections must be communicated to the applicant in the first Office Action. DO NOT send a copy of this form.

RAW SEQUENCE LISTING

DATE: 11/06/2001

PATENT APPLICATION: US/09/786,389

TIME: 07:51:49

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\11062001\I786389.raw

p.5

4 <110> APPLICANT: Japan Science and Technology Corporation
6 <120> TITLE OF INVENTION: Amino Acid Transporter And Gene Thereof
8 <130> FILE REFERENCE: PC901338
C--> 10 <140> CURRENT APPLICATION NUMBER: US/09/786,389
C--> 11 <141> CURRENT FILING DATE: 2001-09-19
13 <160> NUMBER OF SEQ ID NOS: 27
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17 <211> LENGTH: 4539
18 <212> TYPE: DNA
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27 <222> LOCATION: (66)..(1589)
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31 <222> LOCATION: (1590)..(4474)
33 <400> SEQUENCE: 1
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36 agagc atg gcg ggt gcg ggc ccg aag cg cgc gcg cta gcg gcg ccg gcg 110
37 Met Ala Gly Ala Gly Pro Lys Arg Arg Ala Leu Ala Ala Pro Ala
38 1 5 10 15
40 gcc gag gag aag gaa gag gcg cgg gag aag atg ctg gcc gcc aag agc 158
41 Ala Glu Glu Lys Glu Glu Ala Arg Glu Lys Met Leu Ala Ala Lys Ser
42 20 25 30
44 gcg gac ggc tcg gcg ccg gca ggc gag ggc gag ggc gtg acc ctg cag 206
45 Ala Asp Gly Ser Ala Pro Ala Gly Glu Gly Val Thr Leu Gln
46 35 40 45
48 cgg aac atc acg ctg ctc aac ggc gtg gcc atc atc gtg ggg acc att 254
49 Arg Asn Ile Thr Leu Leu Asn Gly Val Ala Ile Ile Val Gly Thr Ile
50 50 55 60
52 atc ggc tcg ggc atc ttc gtg acg ccc acg ggc gtg ctc aag gag gca 302
53 Ile Gly Ser Gly Ile Phe Val Thr Pro Thr Gly Val Leu Lys Glu Ala
54 65 70 75
56 ggc tcg ccg ggg ctg gcg ctg gtg gtg tgg gcc gcg tgc ggc gtc ttc 350
57 Gly Ser Pro Gly Leu Ala Leu Val Val Trp Ala Ala Cys Gly Val Phe
58 80 85 90 95
60 tcc atc gtg ggc gcg ctc tgc tac gcg gag ctc ggc acc acc atc tcc 398
61 Ser Ile Val Gly Ala Leu Cys Tyr Ala Glu Leu Gly Thr Thr Ile Ser
62 100 105 110
64 aaa tcg ggc ggc gac tac gcc tac atg ctg gag gtc tac ggc tcg ctg 446
65 Lys Ser Gly Gly Asp Tyr Ala Tyr Met Leu Glu Val Tyr Gly Ser Leu
66 115 120 125
68 ccc gcc ttc ctc aag ctc tgg atc gag ctg ctc atc atc cgg cct tca 494
69 Pro Ala Phe Leu Lys Leu Trp Ile Glu Leu Leu Ile Ile Arg Pro Ser

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PATENT APPLICATION: US/09/786,389

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TIME: 07:51:49

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\11062001\I786389.raw

70	130	135	140	
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73	Ser Gln Tyr Ile Val Ala Leu Val Phe Ala Thr Tyr Leu Leu Lys Pro			
74	145	150	155	
76	ctc ttc ccc acc tgc ccg gtg ccc gag gag gca gcc aag ctc gtg gcc	590		
77	Leu Phe Pro Thr Cys Pro Val Pro Glu Glu Ala Ala Lys Leu Val Ala			
78	160	165	170	175
80	tgc ctc tgc gtg ctg ctg ctc acg gcc gtg aac tgc tac agc gtg aag	638		
81	Cys Leu Cys Val Leu Leu Leu Thr Ala Val Asn Cys Tyr Ser Val Lys			
82	180	185	190	
84	gcc gcc acc cgg gtc cag gat gcc ttt gcc gcc gcc aag ctc ctg gcc	686		
85	Ala Ala Thr Arg Val Gln Asp Ala Phe Ala Ala Ala Lys Leu Leu Ala			
86	195	200	205	
88	ctg gcc ctg atc atc ctg ctg ggc ttc gtc cag atc ggg aag ggt gat	734		
89	Leu Ala Leu Ile Ile Leu Leu Gly Phe Val Gln Ile Gly Lys Gly Asp			
90	210	215	220	
92	gtg tcc aat cta gat ccc aac ttc tca ttt gaa ggc acc aaa ctg gat	782		
93	Val Ser Asn Leu Asp Pro Asn Phe Ser Phe Glu Gly Thr Lys Leu Asp			
94	225	230	235	
96	gtg ggg aac att gtg ctg gca tta tac agc ggc ctc ttt gcc tat gga	830		
97	Val Gly Asn Ile Val Leu Ala Leu Tyr Ser Gly Leu Phe Ala Tyr Gly			
98	240	245	250	255
100	gga tgg aat tac ttg aat ttc gtc aca gag gaa atg atc aac ccc tac	878		
101	Gly Trp Asn Tyr Leu Asn Phe Val Thr Glu Glu Met Ile Asn Pro Tyr			
102	260	265	270	
104	aga aac ctg ccc ctg gcc atc atc atc tcc ctg ccc atc gtg acg ctg	926		
105	Arg Asn Leu Pro Leu Ala Ile Ile Ile Ser Leu Pro Ile Val Thr Leu			
106	275	280	285	
108	gtg tac gtg ctg acc aac ctg gcc tac ttc acc acc ctg tcc acc gag	974		
109	Val Tyr Val Leu Thr Asn Leu Ala Tyr Phe Thr Thr Leu Ser Thr Glu			
110	290	295	300	
112	cag atg ctg tgc tcc gag gcc gtg gcc gtg gac ttc ggg aac tat cac	1022		
113	Gln Met Leu Ser Ser Glu Ala Val Ala Val Asp Phe Gly Asn Tyr His			
114	305	310	315	
116	ctg ggc gtc atg tcc tgg atc atc ccc gtc ttc gtg ggc ctg tcc tgc	1070		
117	Leu Gly Val Met Ser Trp Ile Ile Pro Val Phe Val Gly Leu Ser Cys			
118	320	325	330	335
120	ttc ggc tcc gtc aat ggg tcc ctg ttc aca tcc tcc agg ctc ttc ttc	1118		
121	Phe Gly Ser Val Asn Gly Ser Leu Phe Thr Ser Ser Arg Leu Phe Phe			
122	340	345	350	
124	gtg ggg tcc cgg gaa ggc cac ctg ccc tcc atc ctc tcc atg atc cac	1166		
125	Val Gly Ser Arg Glu Gly His Leu Pro Ser Ile Leu Ser Met Ile His			
126	355	360	365	
128	cca cag ctc ctc acc ccc gtg ccg tcc ctc gtg ttc acg tgt gtg atg	1214		
129	Pro Gln Leu Leu Thr Pro Val Pro Ser Leu Val Phe Thr Cys Val Met			
130	370	375	380	
132	acg ctg ctc tac gcc ttc tcc aag gac atc ttc tcc gtc atc aac ttc	1262		
133	Thr Leu Leu Tyr Ala Phe Ser Lys Asp Ile Phe Ser Val Ile Asn Phe			
134	385	390	395	

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/786,389

DATE: 11/06/2001

TIME: 07:51:49

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\11062001\I786389.raw

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136 ttc agc ttc ttc aac tgg ctc tgc gtg gcc ctg gcc atc atc ggc atg 1310
137 Phe Ser Phe Phe Asn Trp Leu Cys Val Ala Leu Ala Ile Ile Gly Met
138 400 405 410 415
140 atc tgg ctg cgc cac aga aag cct gag ctt gag cgg ccc atc aag gtg 1358
141 Ile Trp Leu Arg His Arg Lys Pro Glu Leu Glu Arg Pro Ile Lys Val
142 420 425 430
144 aac ctg gcc ctg cct gtg ttc ttc atc ctg gcc tgc ctc ttc ctg atc 1406
145 Asn Leu Ala Leu Pro Val Phe Phe Ile Leu Ala Cys Leu Phe Leu Ile
146 435 440 445
148 gcc gtc tcc ttc tgg aag aca ccc gtg gag tgt ggc atc ggc ttc acc 1454
149 Ala Val Ser Phe Trp Lys Thr Pro Val Glu Cys Gly Ile Gly Phe Thr
150 450 455 460
152 atc atc ctc agc ggg ctg ccc gtc tac ttc ttc ggg gtc tgg tgg aaa 1502
153 Ile Ile Leu Ser Gly Leu Pro Val Tyr Phe Phe Gly Val Trp Trp Lys
154 465 470 475
156 aac aag ccc aag tgg ctc ctc cag ggc atc ttc tcc acg acc gtc ctg 1550
157 Asn Lys Pro Lys Trp Leu Leu Gln Gly Ile Phe Ser Thr Thr Val Leu
158 480 485 490 495
160 tgt cag aag ctc atg cag gtg gtc ccc cag gag aca tag ccaggaggcc 1599
161 Cys Gln Lys Leu Met Gln Val Val Pro Gln Glu Thr
162 500 505
164 gagtggctgc cggaggagca tgcgcagagg ccagttaaaag tagatcacct cctcgaaccc 1659
166 actccgggttc cccgcaaccc acagctcagc tgcccatccc agtccctcgc cgtccctccc 1719
168 aggtcgggca gtggaggctg ctgtgaaaac tctggtacga atctcatccc tcaactgagg 1779
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216 cccctcacc atccagtggg cccggagaaa cctgatgaac agtttgggga ctcaggacca 3219
218 gatgtccgtc tctcttgctt gaggaatgaa gacctttatt caccctgcc ccgttgcttc 3279

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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/786,389

DATE: 11/06/2001

TIME: 07:51:49

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\11062001\I786389.raw

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222 cgaattccac tcgtccaagg gacagcccac ggtctggagg ccgaggacca ccagcaggca 3399
224 ggtggactga ctgtgttggg caagacctct tccctctggg cctgttctct tggctgcaaa 3459
226 taaggacagc agctgggtgcc ccacctgcct ggtgcattgc tgtgtgaatc caggaggcag 3519
228 tggacatcgt aggagccac ggccccgggt ccaggagaag tgctccctgg aggacgcac 3579
230 cactgcttcc cactgggggcc ggcgggggcc acgcacgacg tcagcctctt accttcccgc 3639
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234 tgcctcaagg atacagggag ccggcggcct ctgcagcgca cgcacttgcc tgttggctgc 3759
236 tgcggctgtg ggcgagcatg ggggctgcca gcgtctgttg tggaaagtag ctgctagtga 3819
238 aatggctggg gccgtcggg tccgtcttca cactgcgcag gtctcttctg ggcgtctgag 3879
240 ctgggggtgg agtcctcccg cagaaggttg gtgggggggtc cagtctgtga tccttgggtg 3939
242 tgtgtgcccc actccagcct ggggacccca cttcagaagg taggggccgt gtcccgcgt 3999
244 gctgactgag gcctgcttcc cctcccccct cctgctgtgc tggaaattcca cagggaccag 4059
246 ggccaccgca ggggactgtc tcagaagact tgatttttcc gtcccttttt ctccacactc 4119
248 cactgacaaa cgtccccagc ggtttccact tgtgggcttc aggtgttttc aagcacaacc 4179
250 caccacaaca agcaagtgca ttttcagtcg ttgtgctttt ttgttttgtg ctaacgtctt 4239
252 actaatttaa agatgctgtc ggcaccatgt ttattttatt ccagtgggtc tgctcagcct 4299
254 tgctgctctg cgtggcgag gtgccatgcc tgctccctgt ctgtgtccca gccacgcagg 4359
256 gccatccact gtgacgtcgg ccgaccaggc tggacaccct ctgccgagta atgacgtgtg 4419
258 tggctgggac cttctttatt ctgtgttaat ggctaacctg ttacactggg ctgggttggg 4479
260 taggggtgtt tggctttttt gtgggggttt tatttttaaa gaaacactca atcatcctag 4539

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263 <210> SEQ ID NO: 2

264 <211> LENGTH: 507

265 <212> TYPE: PRT

266 <213> ORGANISM: Homo sapiens

268 <400> SEQUENCE: 2

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269 Met Ala Gly Ala Gly Pro Lys Arg Arg Ala Leu Ala Ala Pro Ala Ala
270 1 5 10 15
272 Glu Glu Lys Glu Glu Ala Arg Glu Lys Met Leu Ala Ala Lys Ser Ala
273 20 25 30
275 Asp Gly Ser Ala Pro Ala Gly Glu Gly Glu Gly Val Thr Leu Gln Arg
276 35 40 45
278 Asn Ile Thr Leu Leu Asn Gly Val Ala Ile Ile Val Gly Thr Ile Ile
279 50 55 60
281 Gly Ser Gly Ile Phe Val Thr Pro Thr Gly Val Leu Lys Glu Ala Gly
282 65 70 75 80
284 Ser Pro Gly Leu Ala Leu Val Val Trp Ala Ala Cys Gly Val Phe Ser
285 85 90 95
287 Ile Val Gly Ala Leu Cys Tyr Ala Glu Leu Gly Thr Thr Ile Ser Lys
288 100 105 110
290 Ser Gly Gly Asp Tyr Ala Tyr Met Leu Glu Val Tyr Gly Ser Leu Pro
291 115 120 125
293 Ala Phe Leu Lys Leu Trp Ile Glu Leu Leu Ile Ile Arg Pro Ser Ser
294 130 135 140
296 Gln Tyr Ile Val Ala Leu Val Phe Ala Thr Tyr Leu Leu Lys Pro Leu
297 145 150 155 160
299 Phe Pro Thr Cys Pro Val Pro Glu Glu Ala Ala Lys Leu Val Ala Cys
300 165 170 175
302 Leu Cys Val Leu Leu Leu Thr Ala Val Asn Cys Tyr Ser Val Lys Ala

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RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/786,389

DATE: 11/06/2001

TIME: 07:51:49

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\11062001\I786389.raw

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305 Ala Thr Arg Val Gln Asp Ala Phe Ala Ala Ala Lys Leu Leu Ala Leu
306          195          200          205
308 Ala Leu Ile Ile Leu Leu Gly Phe Val Gln Ile Gly Lys Gly Asp Val
309          210          215          220
311 Ser Asn Leu Asp Pro Asn Phe Ser Phe Glu Gly Thr Lys Leu Asp Val
312 225          230          235          240
314 Gly Asn Ile Val Leu Ala Leu Tyr Ser Gly Leu Phe Ala Tyr Gly Gly
315          245          250          255
317 Trp Asn Tyr Leu Asn Phe Val Thr Glu Glu Met Ile Asn Pro Tyr Arg
318          260          265          270
320 Asn Leu Pro Leu Ala Ile Ile Ile Ser Leu Pro Ile Val Thr Leu Val
321          275          280          285
323 Tyr Val Leu Thr Asn Leu Ala Tyr Phe Thr Thr Leu Ser Thr Glu Gln
324          290          295          300
326 Met Leu Ser Ser Glu Ala Val Ala Val Asp Phe Gly Asn Tyr His Leu
327 305          310          315          320
329 Gly Val Met Ser Trp Ile Ile Pro Val Phe Val Gly Leu Ser Cys Phe
330          325          330          335
332 Gly Ser Val Asn Gly Ser Leu Phe Thr Ser Ser Arg Leu Phe Phe Val
333          340          345          350
335 Gly Ser Arg Glu Gly His Leu Pro Ser Ile Leu Ser Met Ile His Pro
336          355          360          365
338 Gln Leu Leu Thr Pro Val Pro Ser Leu Val Phe Thr Cys Val Met Thr
339          370          375          380
341 Leu Leu Tyr Ala Phe Ser Lys Asp Ile Phe Ser Val Ile Asn Phe Phe
342 385          390          395          400
344 Ser Phe Phe Asn Trp Leu Cys Val Ala Leu Ala Ile Ile Gly Met Ile
345          405          410          415
347 Trp Leu Arg His Arg Lys Pro Glu Leu Glu Arg Pro Ile Lys Val Asn
348          420          425          430
350 Leu Ala Leu Pro Val Phe Phe Ile Leu Ala Cys Leu Phe Leu Ile Ala
351          435          440          445
353 Val Ser Phe Trp Lys Thr Pro Val Glu Cys Gly Ile Gly Phe Thr Ile
354          450          455          460
356 Ile Leu Ser Gly Leu Pro Val Tyr Phe Phe Gly Val Trp Trp Lys Asn
357 465          470          475          480
359 Lys Pro Lys Trp Leu Leu Gln Gly Ile Phe Ser Thr Thr Val Leu Cys
360          485          490          495
362 Gln Lys Leu Met Gln Val Val Pro Gln Glu Thr
363          500          505
366 <210> SEQ ID NO: 3
367 <211> LENGTH: 3455
368 <212> TYPE: DNA
369 <213> ORGANISM: Rat
371 <220> FEATURE:
372 <221> NAME/KEY: 5'UTR
373 <222> LOCATION: (1)..(63)
375 <220> FEATURE:

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Use of n and/or Xaa has been detected in the Sequence Listing.
Review the Sequence Listing to insure a corresponding
explanation is presented in the <220> to <223> fields of
each sequence using n or Xaa.

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/786,389

DATE: 11/06/2001

TIME: 07:51:50

Input Set : A:\PTO.AMC.txt

Output Set: N:\CRF3\11062001\I786389.raw

L:10 M:270 C: Current Application Number differs, Replaced Application Number
L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:1569 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:26
L:1569 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26
L:1573 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:26
L:1573 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26
L:1577 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:26
L:1577 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26
L:1660 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:27
L:1660 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:1696 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:27
L:1696 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:1700 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:27
L:1700 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:1704 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:27
L:1704 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:1708 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:27
L:1708 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:1712 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:27
L:1712 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:1716 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:27
L:1716 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:1720 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:27
L:1720 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:1728 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:27
L:1728 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:1732 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:27
L:1732 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:1736 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:27
L:1736 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:1740 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:27
L:1740 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:1744 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:27
L:1744 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:1752 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:27
L:1752 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:1756 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:27
L:1756 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:1760 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:27
L:1760 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27
L:1776 M:258 W: Mandatory Feature missing, <223> not found for SEQ ID#:27
L:1776 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27

PAGE: 1

RAW SEQUENCE LISTING
PATENT APPLICATION US/09/786,389

 DATE: 10/30/2001
 TIME: 14:53:56

Input Set: I786389.RAW

 This Raw Listing contains the General
 Information Section and those Sequences
 containing ERRORS.

1 <110> Japan Science and Technology Corporation
 2 <120> Amino Acid Transporter And Gene Thereof
 3 <130> PC901338
 4 <140> US/09/786,389
 5 <141> 2001-09-19
 6 <160> 27

Does Not Comply
Corrected Diskette Needed

ERRORED SEQUENCES FOLLOW

E--> 7 <210> 5
 8 <211> 1863
 9 <212> DNA
 10 <213> Homo sapiens
 11 <220>
 12 <221> 5'UTR
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 16 <222> (110)..(1699)
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 18 <221> 3'UTR
 19 <222> (1700)..(1863)
 20 <400> 5
 21 gcgcggagcc acagaggccg gggagagcgt tctgggtccg aggggtccagg taggggttga 60
 22 gccaccatct gaccgcaagc tgcgtcgtgt cgccggttct gcaggcacc atg agc cag 118
 23 Met Ser Gln
 24 1
 25 gac acc gag gtg gat atg aag gag gtg gag ctg aat gag tta gag ccc 166
 26 Asp Thr Glu Val Asp Met Lys Glu Val Glu Leu Asn Glu Leu Glu Pro
 27 5 10 15
 28 gag aag cag ccg atg aac gcg gcg tct ggg gcg gcc atg tcc ctg gcg 214
 29 Glu Lys Gln Pro Met Asn Ala Ala Ser Gly Ala Ala Met Ser Leu Ala
 30 20 25 30 35
 31 gga gcc gag aag aat ggt ctg gtg aag atc aag gtg gcg gaa gac gag 262
 32 Gly Ala Glu Lys Asn Gly Leu Val Lys Ile Lys Val Ala Glu Asp Glu
 33 40 45 50
 34 gcg gag gcg gca gcc gcg gct aag ttc acg ggc ctg tcc aag gag gag 310
 35 Ala Glu Ala Ala Ala Ala Ala Lys Phe Thr Gly Leu Ser Lys Glu Glu
 36 55 60 65
 37 ctg ctg aag gtg gca ggc agc ccc ggc tgg gta cgc acc cgc tgg gca 358
 38 Leu Leu Lys Val Ala Gly Ser Pro Gly Trp Val Arg Thr Arg Trp Ala
 39 70 75 80

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RAW SEQUENCE LISTING
PATENT APPLICATION US/09/786,389

 DATE: 10/30/2001
 TIME: 14:53:56

Input Set: I786389.RAW

40	ctg ctg ctg ctc ttc tgg ctc ggc tgg ctc ggc atg ctt gct ggt gcc	406
41	Leu Leu Leu Leu Phe Trp Leu Gly Trp Leu Gly Met Leu Ala Gly Ala	
42	85 90 95	
43	gtg gtc ata atc gtg cga gcg ccg cgt tgt cgc gag cta ccg gcg cag	454
44	Val Val Ile Ile Val Arg Ala Pro Arg Cys Arg Glu Leu Pro Ala Gln	
45	100 105 110 115	
46	aag tgg tgg cac acg ggc gcc ctc tac cgc atc ggc gac ctt cag gcc	502
47	Lys Trp Trp His Thr Gly Ala Leu Tyr Arg Ile Gly Asp Leu Gln Ala	
48	120 125 130	
49	ttc cag ggc cac ggc gcg ggc aac ctg gcg ggt ctg aag ggg cgt ctc	550
50	Phe Gln Gly His Gly Ala Gly Asn Leu Ala Gly Leu Lys Gly Arg Leu	
51	135 140 145	
52	gat tac ctg agc tct ctg aag gtg aag ggc ctt gtg ctg ggt cca att	598
53	Asp Tyr Leu Ser Ser Leu Lys Val Lys Gly Leu Val Leu Gly Pro Ile	
54	150 155 160	
55	cac aag aac cag aag gat gat gtc gct cag act gac ttg ctg cag atc	646
56	His Lys Asn Gln Lys Asp Asp Val Ala Gln Thr Asp Leu Leu Gln Ile	
57	165 170 175	
58	gac ccc aat ttt ggc tcc aag gaa gat ttt gac agt ctc ttg caa tcg	694
59	Asp Pro Asn Phe Gly Ser Lys Glu Asp Phe Asp Ser Leu Leu Gln Ser	
60	180 185 190 195	
61	gct aaa aaa aag agc atc cgt gtc att ctg gac ctt act ccc aac tac	742
62	Ala Lys Lys Lys Ser Ile Arg Val Ile Leu Asp Leu Thr Pro Asn Tyr	
63	200 205 210	
64	cgg ggt gag aac tcg tgg ttc tcc act cag gtt gac act gtg gcc acc	790
65	Arg Gly Glu Asn Ser Trp Phe Ser Thr Gln Val Asp Thr Val Ala Thr	
66	215 220 225	
67	aag gtg aag gat gct ctg gag ttt tgg ctg caa gct ggc gtg gat ggg	838
68	Lys Val Lys Asp Ala Leu Glu Phe Trp Leu Gln Ala Gly Val Asp Gly	
69	230 235 240	
70	ttc cag gtt cgg gac ata gag aat ctg aag gat gca tcc tca ttc ttg	886
71	Phe Gln Val Arg Asp Ile Glu Asn Leu Lys Asp Ala Ser Ser Phe Leu	
72	245 250 255	
73	gct gag tgg caa aat atc acc aag ggc ttc agt gaa gac agg ctc ttg	934
74	Ala Glu Trp Gln Asn Ile Thr Lys Gly Phe Ser Glu Asp Arg Leu Leu	
75	260 265 270 275	
76	att gcg ggg act aac tcc tcc gac ctt cag cag atc ctg agc cta ctc	982
77	Ile Ala Gly Thr Asn Ser Ser Asp Leu Gln Gln Ile Leu Ser Leu Leu	
78	280 285 290	
79	gaa tcc aac aaa gac ttg ctg ttg act agc tca tac ctg tct gat tct	1030
80	Glu Ser Asn Lys Asp Leu Leu Leu Thr Ser Ser Tyr Leu Ser Asp Ser	
81	295 300 305	
82	ggt tct act ggg gag cat aca aaa tcc cta gtc aca cag tat ttg aat	1078
83	Gly Ser Thr Gly Glu His Thr Lys Ser Leu Val Thr Gln Tyr Leu Asn	
84	310 315 320	
85	gcc act ggc aat cgc tgg tgc agc tgg agt ttg tct cag gca agg ctc	1126
86	Ala Thr Gly Asn Arg Trp Cys Ser Trp Ser Leu Ser Gln Ala Arg Leu	
87	325 330 335	
88	ctg act tcc ttc ttg ccg gct caa ctt ctc cga ctc tac cag ctg atg	1174
89	Leu Thr Ser Phe Leu Pro Ala Gln Leu Leu Arg Leu Tyr Gln Leu Met	

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RAW SEQUENCE LISTING PATENT APPLICATION US/09/786,389

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Input Set: I786389.RAW

90	340	345	350	355	
91	ctc ttc acc ctg cca ggg acc cct gtt ttc agc tac ggg gat gag att	1222			
92	Leu Phe Thr Leu Pro Gly Thr Pro Val Phe Ser Tyr Gly Asp Glu Ile				
93		360	365	370	
94	ggc ctg gat gca gct gcc ctt cct gga cag cct atg gag gct cca gtc	1270			
95	Gly Leu Asp Ala Ala Ala Leu Pro Gly Gln Pro Met Glu Ala Pro Val				
96		375	380	385	
97	atg ctg tgg gat gag tcc agc ttc cct gac atc cca ggg gct gta agt	1318			
98	Met Leu Trp Asp Glu Ser Ser Phe Pro Asp Ile Pro Gly Ala Val Ser				
99		390	395	400	
100	gcc aac atg act gtg aag ggc cag agt gaa gac cct ggc tcc ctc ctt	1366			
101	Ala Asn Met Thr Val Lys Gly Gln Ser Glu Asp Pro Gly Ser Leu Leu				
102		405	410	415	
103	tcc ttg ttc cgg cgg ctg agt gac cag cgg agt aag gag cgc tcc cta	1414			
104	Ser Leu Phe Arg Arg Leu Ser Asp Gln Arg Ser Lys Glu Arg Ser Leu				
105		420	425	430	435
106	ctg cat ggg gac ttc cac gcg ttc tcc gct ggg cct gga ctc ttc tcc	1462			
107	Leu His Gly Asp Phe His Ala Phe Ser Ala Gly Pro Gly Leu Phe Ser				
108		440	445	450	
109	tat atc cgc cac tgg gac cag aat gag cgt ttt ctg gta gtg ctt aac	1510			
110	Tyr Ile Arg His Trp Asp Gln Asn Glu Arg Phe Leu Val Val Leu Asn				
111		455	460	465	
112	ttt ggg gat gtg ggc ctc tcg gct gga ctg cag gcc tcc gac ctg cct	1558			
113	Phe Gly Asp Val Gly Leu Ser Ala Gly Leu Gln Ala Ser Asp Leu Pro				
114		470	475	480	
115	gcc agc gcc agc ctc cca gcc aag gct gac ctc ctg ctc agc acc cag	1606			
116	Ala Ser Ala Ser Leu Pro Ala Lys Ala Asp Leu Leu Leu Ser Thr Gln				
117		485	490	495	
118	cca ggc cgt gag gag ggc tcc cct ctt gag ctg gaa cgc ctg aaa ctg	1654			
119	Pro Gly Arg Glu Glu Gly Ser Pro Leu Glu Leu Glu Arg Leu Lys Leu				
120		500	505	510	515
121	gag cct cac gaa ggg ctg ctg ctc cgc ttc ccc tac gcg gcc tga	1699			
122	Glu Pro His Glu Gly Leu Leu Leu Arg Phe Pro Tyr Ala Ala				
W--> 123		520	525	530	
124	cttcagcctg acatggaccc actacccttc tcctttcctt cccaggccct ttggttctga	1759			
125	tttttctctt ttttaaaaac aaacaaacaa actgttgacag attatgagtg aacccccaaa	1819			
E--> 126					
127	taggggtgttt tctgccttca aataaaaagtc acccctgcac ggtg	1863			

Input Set: I786389.RAW

Line	? Error/Warning	Original Text		
8	E Input 1863, Calc# Bases 1864 differ	<211> 1863		
123	W Invalid/Missing Amino Acid Numbering		520	525
126	E Number of Bases conflict w/ Running Total @			
126	E Wrong Nucleic Acid Designator	@		